

**REMARKS**

Claim 34 is canceled without prejudice, and therefore claims 27 to 33 and 35 to 55 are pending in the present application.

In view of the following, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicant thanks the Examiner for acknowledging the claim for foreign priority and for indicating that all of the certified copies of the priority documents have been received.

Claims 27 to 31, 33, and 34 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent 6,515,589 ("Schneider") in view of U.S. Patent 4,769,550 ("Dolnick").

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). To establish *prima facie* obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991).

Also, as clearly indicated by the Supreme Court in *KSR*, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, at 1396. Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

While the rejections may not be agreed with, to facilitate matters, claim 27 has been rewritten to better clarify the claimed subject matter. Claim 34 is canceled without prejudice.

Claim 27, as presented, is to a *fire detector, including: a first radiation transmitter and a first radiation receiver having a first beam path that forms a first scattering volume; a second radiation transmitter and a second radiation receiver having a second beam path that forms a second scattering volume, in which the first scattering volume and the second scattering volume are spatially separated and the first and second radiation transmitters are oriented by an angle of 180° from one another, and in which the first and second radiation receivers are oriented 180° from one another; and a microcomputer to selectably control the first radiation transmitter and the second radiation transmitter, the microcomputer analyzing the first and second scattering volumes through an analog-to-digital converter.*

In particular, claim 27 has been rewritten to provide that the first and second transmitters and the first and second receivers are oriented by an angle of 180° from another. The Schneider and Dolnick references do not disclose or suggest the feature in which each of the transmitters is oriented by 180° from each other or in which each of the receivers is oriented by 180° from the other receiver(s).

As to Schneider, it simply does not even discuss the presence of multiple transmitters and receivers, as provided for in the context of the presently claimed subject matter. As to Dolnick, it merely discusses the presence of multiple light sources and light detectors, and it does not disclose that the light detectors are radiation receivers. Any review of Dolnick conclusively evidences that the light sources (reference characters 2 and 16 in Fig. 1) are only separated by approximately 45°, while the light detectors (reference characters 8 and 12) are separated by approximately 105°. (See Dolnick, Fig.1). These are wholly different than the orientation features of the presently claimed subject matter. The orientation of the transmitters and the receivers of the presently claimed subject matter allow for specific spacing for the resulting beam paths, and changing this orientation would significantly alter the beam paths and resulting scattering volumes.

Additionally claim 27 has been rewritten to include a microcomputer for analyzing the scattering volumes through an analog-to-digital converter, which is not disclosed or suggested by Schneider or Dolnick.

For the aforementioned reasons, claim 27, as presented, is allowable, as are its dependent claims 28 to 31, and 33.

Claims 32, 35 to 41, and 55 were rejected under 35 U.S.C. § 103(a) as unpatentable over Schneider and Dolnick in further view of U.S. Patent 5,381,130 ("Thuillard").

Claims 32, 35 to 41, and 55 depend from claim 27, as presented, and are therefore allowable for essentially the same reasons as claim 27, as presented, since the Thuillard does not cure -- and is not asserted to cure -- the critical deficiencies of the Schneider and Dolnick references.

Claims 42 to 54 were rejected under 35 U.S.C. § 103(a) as unpatentable over Schneider, Dolnick, and Thuillard in view of U.S. Patent 6,218,950 ("Politze").

While the rejections may not be agreed with, to facilitate matters, claim 42 has been rewritten.

Claim 42, as presented is to a *method for operating a fire detector, comprising: checking the fire detector for operability; performing a function check of a set of transmitters and a set of receivers; obtaining scattered radiation measured values from two different scattering volumes; comparing the scattered radiation measured values to one another; inferring a presence of smoke and a source of fire if the scattered radiation measured values are generally equal; determining a type, a size, a distance and a color of the smoke; and inferring a presence of an interfering body in a scattering volume if the scattered radiation measured values deviate from one another.*

The Schneider, Dolnick, Thuillard, and Politze references do not disclose a method for checking the functionality of the detector, as well as the individual transmitters and receivers. Additionally, the Politze reference does not compare the actual measured scatter values but compares the ratio of two scattered radiation signals to a predetermined ratio. This is not a comparison of the values of the two signals, and the Final office Action failed to address this issue. Moreover, Politze does not disclose a method that determines a type of smoke, since it explicitly states that the "type of smoke which is actually present need not be determined." (See Politze, col 2., lines 26-27).

For the reasons explained above, claim 42 is allowable, as are its dependent claims 43 to 54.

As further regards all of the obviousness rejections, any Official Notice is respectfully traversed to the extent that it is maintained and it is requested that the Examiner provide specific evidence to establish those assertions and/or contentions that may be supported by the Official Notices under 37 C.F.R. § 1.104(d)(2) or otherwise. In particular, it is respectfully requested that the Examiner provide an affidavit and/or that the Examiner provide published information concerning these assertions. This is because the § 103 rejections are apparently being based on assertions that draw on facts within the personal knowledge of the Examiner, since no support was provided for these otherwise conclusory and unsupported assertions. (See also MPEP § 2144.03).

Accordingly, claims 27 to 33 and 35 to 55 are allowable.

### CONCLUSION

In view of the above, it is respectfully submitted that all of presently pending claims 27 to 33 and 35 to 55 are allowable. It is therefore respectfully requested that the rejections (and any objections) be withdrawn. Since all issues raised by the Examiner have been addressed, an early and favorable action on the merits is respectfully requested.

Date: 8/11/2009


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